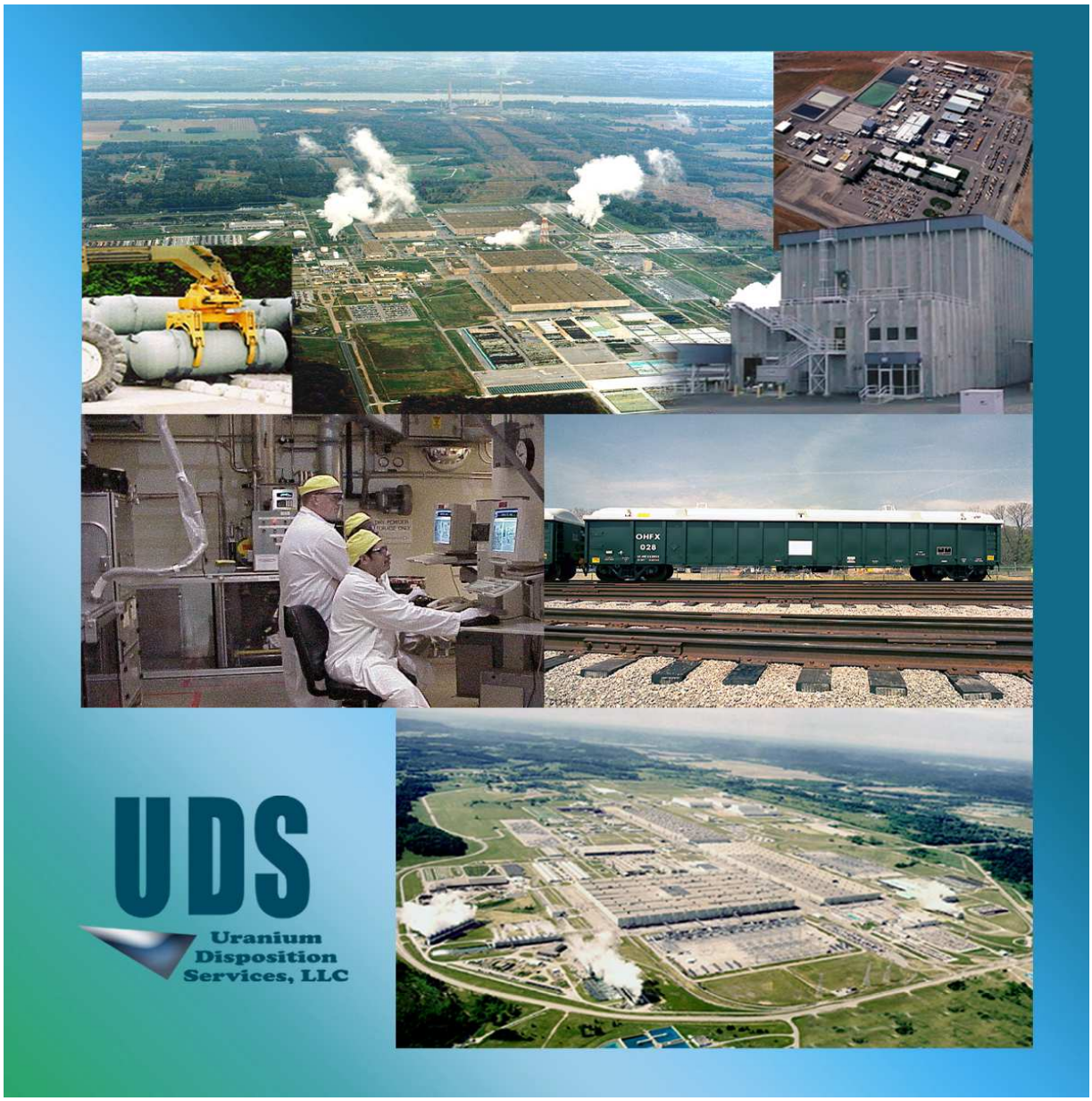
DUF_6 Depleted Uranium Hexafluoride Conversion Project	**DUF6-UDS-PLN-044** **Revision 1** **JUNE 2005**

PADUCAH EMERGENCY MANAGEMENT PLAN



Uranium Disposition Services, LLC ..... U.S. Department of Energy

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Duratek Federal Services, Inc. ..... Paducah Site

Framatome ANP, Inc. ..... Portsmouth Site

DOCUMENT REVIEW AND APPROVAL RECORD

Paducah Emergency
Management Plan

DUF6 -UDS-PLN-044
Revision 1
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DOCUMENT REVIEW AND APPROVAL RECORD		
DOCUMENT REVIEWS		
Reviewer (Name, Title)	Signature	Date
Dick Veazey, Paducah Site Manager (Acting)		6/23/05
DOCUMENT APPROVALS		
Approver (Name, Title)	Signature	Date
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DISCLAIMER

DESCRIPTION OF CHANGES		
Change Location (Section or Page)	Description of Change	Justification for Change
Whole Document	Complete rewrite.	Incorporate necessary changes required to support cylinder yard operations.

CONCURRENCY REQUIREMENTS		
List below any controlled documents that must be issued concurrently with this document.		

DISTRIBUTION REQUIREMENTS	
External Distribution	Hardcopy Distribution

DOCUMENT PRE-APPROVAL REQUIREMENTS			
USQ Review Required	☒	Procedure Walkdown Required	☐
Revision to Training Materials Required	☐	Pre-Job Briefing Required	☐

DOCUMENT SENSITIVITY DETERMINATION			
UDS Proprietary	☐	Office Use Only (OUO)	☐
Unclassified Nuclear Information (UCNI)	☐	Export Controlled Information (ECI)	☐

TRAINING REQUIREMENTS			
No Training Required	☐	Classroom Instruction	☒
Read & Acknowledge	☒	Performance Demonstration	☐
Work Place Script	☐	Other	☐

The managers of the functional organizations that approved the previous revision of the document (unless responsibility for such approval has been transferred to another organization) shall approve all new and revised documents. Records Management shall verify that the required approvals have been properly obtained and that any documents that must be issued concurrently are ready to be issued. Training department verification is required only if training materials or curriculum must be revised before issue.

DOCUMENT REVIEW & APPROVAL REQUIREMENTS				
Document Reviews			**Document Approvals**	
Function of Review	Specify Reviewer	Check all that apply	Title of Approver	Check all that Apply
Records Management		☒	Mgr., Records Mgmt. (Automatic)	☒
Change Author	Haus	☒	Change Author	☒
ES&H Review		☐	Mgr, EHS&S	☒
Compliance		☐	Compliance Officer	☒
Other		☐		
EPC Review			Mgr., EPC	☐
Construction		☐		
Process Design		☐		
Facility Design		☐		
Procurement		☐		
Other		☐		
Operations Review			Mgr., Operations	☒
Site Manager		☐		
Facility Manager	Veazey	☒		
Other		☐		
Business Review			Business Director	☐
Finance Review		☐		
IT Review		☐		
Contracts Review		☐		
Quality Review		☐	Mgr., Quality	☒
Project Controls Review		☐	Mgr., Project Controls	☐
HR Review			Mgr. HR	☒
Training Review		☐		
Labor Relations		☐		
Other		☐	Project Manager	☒

DOCUMENT CONTENTS

1 INTRODUCTION

1.1 Purpose of Emergency Plan

The purpose of the *Paducah Emergency Management Plan*, herein referred to as the "Emergency Plan," is to provide an overview of the Emergency Management System implemented on the U.S. Department of Energy (DOE) Paducah Site and specifically at the Paducah DUF_6 Conversion Plant during construction and cylinder yard operation phases. The Emergency Plan satisfies the emergency planning requirements of 29 Code of the following:

29 CFR 1910.38, Emergency Action Plans

29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals

29 CFR 1910.120, Hazardous Waste Operations and Emergency Responses

40 CFR 112, Oil Pollution Prevention

40 CFR 335, Emergency Planning and Notification

DOE Order 151.1B, Comprehensive Emergency Management System

This Emergency Plan serves to consolidate the various regulatory and DOE order requirements into one functional emergency response plan or integrated contingency plan. The Emergency Plan is intended to provide the information and guidance required to analyze, design, and develop the emergency management program at the Paducah DUF_6 Conversion Plant and to provide a baseline upon which program evaluations will be conducted. Individual implementing procedures and facility specific emergency action plans will be developed to elaborate upon and inform specific personnel of the hazards of an area and necessary protective/response actions.

This emergency plan shall be reviewed at least on an annual basis. Revisions required by changes in emergency planning or facility operations will be implemented and published as changes to the Emergency Plan, or incorporated into the next annual revision.

1.2 Scope

The Emergency Plan has been developed to provide a comprehensive description of the emergency preparedness and response to operational emergencies that may occur at the Paducah DUF_6 Conversion Plant site during construction and cylinder yard operation activities. The UDS Emergency Plan interacts with the USEC PGDP Emergency Plan and compliments the requirements contained within the USEC Plan. During declared emergency events, USEC will assume the role of crisis manager and all directions given by the Crisis Manager (CM) or Plant Shift Superintendent (PSS) must be followed immediately. The UDS plan applies to UDS employees, contractors, and subcontractors performing work at the Paducah DUF_6 Conversion Plant site. This plan does not address Energy and Continuity of Government emergencies.

UDS employees and UDS contractor and subcontractor employees, escorted or not, performing any work activity within the limited area (USEC controlled fenced area) of the gaseous diffusion plant are subject to the requirements of the USEC PGDP

Emergency Plan and the emergency implementing procedures, maintained by United States Enrichment Corporation (USEC), in addition to the requirements identified in this plan.

Off-site transportation accidents involving DOE shipments are considered credible emergency events. This emergency plan does not address responses to off-site transportation accidents since those emergencies fall under the jurisdiction of State and/or local authorities. PGDP and DOE/DOE Contractors will, however, provide technical assistance and information for those off-site transportation incidents involving DOE shipments upon request.

The Emergency Plan comprises several comprehensive emergency management concepts such as planning, preparedness, response, mitigation, and recovery operations.

- "Planning" includes the development and preparation of emergency plans and procedures based on identified hazards and the identification of necessary personnel and resources to provide an effective response.
- "Preparedness" includes the training of personnel; acquisition and maintenance of resources; and exercising of the plans, procedures, personnel, and resources essential for emergency response.
- "Response" represents the implementation of planning and preparedness during an emergency and involves the effective decisions, actions, and application of resources that must be accomplished to mitigate consequences and recover from an emergency.

The scope of the emergency management program and the extent of emergency planning and preparedness required are based upon, and are commensurate with, the hazards and consequences associated with the Paducah DUF_6 Conversion Plant facility and/or its specific operation.

Hazards assessments provide the technical basis for the emergency management program. The extent of emergency planning and preparedness required for a particular facility directly corresponds to the type and scope of hazards present and the potential consequences of accidents or events. It is understood that not every conceivable situation is analyzed; thus, not every response can be preplanned. However, the existence of adequate hazards assessments, in combination with effective emergency planning and preparedness, provides the framework for response to virtually any operational emergency.

The DUF_6 emergency management program is established through emergency plans, procedures to implement the plans, and other supporting documents. The Emergency Plan and facility-specific employee emergency action plans provide a clear statement of how the overall emergency management system is integrated. Emergency procedures contain the detailed information and specific instructions for emergency response personnel to implement the emergency plans. Additional supporting documents include, but are not limited to, technical safety manuals, engineering drawings, documented safety analysis (DSAs), Unreviewed Safety Question Determination (USQD), and other related program documents, plans, and assessments.

1.3 Concept of Operation

This emergency plan has been prepared to address emergency events occurring/affecting the Paducah DUF_6 Conversion Plant during the construction and cylinder yard operation phases of the DUF_6 project. The emergency plan is based on the typical hazards and industrial events that may be associated with these phases of the DUF_6 Project.

A facility emergency planning hazards assessment will be prepared as new hazards are developed and prior to plant operations, for the Paducah DUF_6 Conversion Plant in accordance with the DOE emergency management requirements. The hazard assessment and related documentation (i.e., emergency action levels) will enable site and facility emergency response organizations to correctly assess the consequences of an event, notify emergency response personnel, classify the event, and recommend appropriate protective actions to remediate the situation. These will be shared with the USEC Emergency Management organization.

Once prepared, the Paducah DUF_6 Conversion Plant emergency planning hazards assessment will document the specific facility events and hazards affecting the population and facility operations at the Paducah site, and the general public offsite. The hazards assessment will include an identification of the types and quantities of hazardous materials used or stored at the facility. In addition and as stated above, the assessment will provide an analysis of potential accidents that might require protective actions onsite and offsite.

1.4 Site Description

1.4.1 Description of the Paducah DUF_6 Conversion Plant

The DUF_6 Conversion Project will convert DOE's existing DUF_6 inventory, consisting of approximately 700,000 metric tons (MT) contained in about 63,300 cylinders currently located at the Paducah and Portsmouth Gaseous Diffusion plants and East Tennessee Technology Park to a more stable form, (uranium oxide, predominantly U_3O_8). Approximately 37,000 of these cylinders are located at the Paducah Plant Site. The scope of the project includes the design/construction of conversion facilities and cylinder yard operations. Cylinder yard operations includes management of DOE's inventory of DUF_6, low-enriched uranium (LEU) hexafluoride (UF_6), natural assay UF_6, and heel and empty cylinders and the maintenance of inventory records. The estimated duration of the conversion project is 25 years.

The selected process is the UDS dry conversion method. The method incorporates a continuous process in which DUF_6 is vaporized and converted to uranium oxide in a fluidized bed conversion unit. The resulting powder is collected and packaged for disposition. The process equipment is arranged in parallel lines, each line consisting of two autoclaves, two conversion units, a hydrogen fluoride (HF) recovery system, and process off-gas scrubbers. Equipment will also be installed to collect the HF by-product for sale as a marketable product. The emptied cylinders are stabilized to reduce the un-neutralized fluorides and aged to reduce the Th-234 activity to meet ALARA requirements. The emptied 48" diameter cylinders, and/or CV12 cylinders will have flanges attached to them and if found acceptable for use as a waste container, they then will be used as shipping containers for the uranium oxide. Smaller or unacceptable cylinders will be sent to disposal at an approved off-site waste disposal site.

The Paducah DUF_6 conversion facility is located at DOE's Paducah Gaseous Diffusion Plant (PGDP) site, approximately 10 miles west of the city of Paducah, in McCracken County, Kentucky. The conversion facility site is located south of the existing Plant security fence along the main plant access road adjacent to the existing DOE cylinder yards. Figure 1-1 shows the location of the conversion facility within the Paducah Gaseous Diffusion Plant site buffer area. The arrangement of the major buildings and facilities, and their associated activities, are shown in Figure 1-2.

1.4.2 Description of Paducah DOE Reservation and Area Near the Reservation

DOE's mission on the Paducah DOE reservation is: the restoration of the environment at or around the PGDP; environmental management by protecting and enhancing the environment; waste management through waste minimization, treatment and disposal; uranium programs, inclusive of DUF_6 cylinder management; and decontamination and decommissioning facilities and equipment in a safe and cost-effective manner.

The DOE reservation is a DOE controlled 3553-acre site located at latitude 37◦06'49" north and longitude 88▫47'39" west measured at the center of the Paducah Gaseous Diffusion Plant in western Kentucky, within McCracken County. The reservation is located 3.5 miles south of the Ohio River, 20 miles east-northeast of the confluence of the Ohio and Mississippi rivers, and west of the Tennessee and Cumberland rivers. The Missouri state boundary is 20 miles to the west. The Tennessee state boundary is 40 miles to the south. Downtown Paducah, Kentucky is located approximately 10 miles southeast of PGDP. The Illinois state border is 4 miles to the north.

The most visible features on the reservation are part of the Paducah Gaseous Diffusion Plant (PGDP), a uranium enrichment facility leased by the United States Enrichment Corporation from the Department of Energy (DOE), which is situated on a plant controlled security fenced 650 acre area approximately in the middle of the reservation. The primary mission of the PGDP is the enrichment of uranium for nuclear reactor fuel. PGDP utilizes the gaseous diffusion process to achieve its mission. The PGDP includes six major process buildings, a series of electrical switchyards, storage areas, cooling towers, a steam plant, water treatment plant, sewage disposal plant and pollution abatement facility, service and maintenance buildings, and facilities for administration, medical, fire, and security.

The general location of the reservation is an area of low relief with elevations predominantly below 500 ft mean sea level. The region contains many rivers and streams. The largest rivers in the area are the Mississippi to the west, the Ohio to the north, and the Tennessee and Cumberland to the east. The reservation and surrounding area elevations vary from 290 ft above sea level at the Ohio River to 380 ft above sea level at the center of the gaseous diffusion plant, about 3.6 miles away. The average slope of 23.7 ft/mile is typical of both the immediate vicinity and the region south of the Ohio River.

The site access road extends from the main plant entrance to Kentucky Highway 725 (Woodville Road), which in turn connects with U.S. 60. One intersection exists on the plant entrance road. At this location, South Acid Road leads to the west, and Dykes Road wraps around the eastern side of the plant.

Railroads are available for the shipment of cylinders and coal to the PGDP. The existing rail spur crosses east - west to the south of the reservation, enters DOE property, then enters the western side of the PGDP fenced area before branching to several areas inside the fence.

There are no rivers or major streams traversing the reservation. However, two small tributaries of the Ohio River, Little Bayou Creek on the east and Big Bayou Creek on the west, provide surface drainage from the reservation, including the Paducah site. These creeks have little flow other than plant effluents except during the wetter months of the year. The two streams join north of the Paducah site and discharge to the Ohio River. The site has an extensive system of dikes and inverted pipe dams in place to contain spills of hazardous substances that might otherwise enter these waterways on adjacent reservation property.

The Commonwealth of Kentucky manages approximately 1986 acres outside the protected security fence as part of the West Kentucky Wildlife Management Area. The entire DOE reservation is public exclusion property.

The areas adjacent to the reservation are largely agricultural with a relatively low population density. Agricultural and forested land comprise the predominate land use patterns in the surrounding area. Agricultural and open-space land account for approximately 75% of the area surrounding the reservation, while urban/built-up areas total approximately 10% of the nearby area.

Counties adjacent to the reservation with the exception of the host county of McCracken, include Ballard, Carlisle, Graves, and Marshall in Kentucky, and Massac in Illinois. Nearby cities, and their approximate distances from the site, include the following: Metropolis, Illinois, 6 miles northwest; Mayfield, 28 miles south-southeast; and Benton, 31 miles southeast. Other cities in the area are small, with populations averaging < 1000. Communities closest to the site include the unincorporated towns of Grahamville, Heath, Kevil, Woodville, and Rossington, all of which are within approximately 3 miles of the site. Paducah, located about 10 miles east of the reservation and the largest city in the region, has an estimated population of 26,307 (2000). The Paducah DOE reservation is in a rural, low-population area, and is well separated from high-density, high-growth-rate areas that might complicate emergency preparedness efforts.

There are no unrelated industrial, commercial, institutional or residential structures within the reservation with the exception of the Paducah Gaseous Diffusion Plant that is leased from DOE by USEC. There are no military installations located near the site. There are no installations or facilities, such as schools, nursing homes, prisons, etc., located within the Site's two (2) mile immediate notification area.

Figure 1-1. Location of the Paducah DUF_6 conversion facility at the Paducah Gaseous Diffusion Plant.

Figure 1-2. Paducah DUF_6 Conversion Plant facility layout.

2 EMERGENCY RESPONSE ORGANIZATION

2.1 Organization Structure

UDS provides Construction Management Services and Cylinder Surveillance and Maintenance Services to DOE for the Paducah DUF_6 Conversion Plant activities. The UDS Resident Construction Manager is responsible for the day-to-day overall management of plant construction activities. The Paducah Cylinder Yard Manager is responsible for day-to-day management of the cylinder yard activities. UDS administrative, technical support, and field personnel are normally on-site daily, Monday through Friday, holidays excluded.

DOE provides oversight for those activities involving the Conversion Plant construction and operations. Events involving DOE operations or property are reported to DOE Oak Ridge Operations Center (OROC) and the DOE Portsmouth-Paducah Project Office (PPPO) in Lexington, Kentucky.

As defined in the work authorization between UDS and USEC, the USEC Plant Shift Superintendent (PSS) serves as the UDS designated representative on the off-shift. Each of the four rotating PGDP shifts includes a PSS and a plant emergency squad in their organizational makeup. The plant emergency squad is a team of highly trained employees, representing various areas and functional organizations of the Plant..

The PSS may assume the role of Incident Commander (IC), or assign an individual qualified as IC, during an emergency situation in order to protect personnel, essential operations, and government property from fire, chemical, and other hazards.

In addition to overseeing facility activities on the off-shift, the PSS is responsible for making proper notifications in regards to abnormal site/facility conditions, and classifying emergencies in accordance with emergency plan implementing procedures.

2.2 Emergency Direction and Control

During declared emergencies, response facilities on the Paducah site are staffed by Paducah Site personnel, primarily USEC responders. The Paducah emergency response organization (ERO) consists of all site personnel with emergency responsibilities. The ERO includes functional groups, such as the Plant Emergency Squad (on-scene responders), EOC Cadre and Joint Public Information Center (JPIC). The Uranium Disposition Services Emergency Management Center (EMC) Cadre serves as a technical assistance and support group to these functional elements.

Members of these groups are assigned to the appropriate emergency support role by their management and in coordination with the other parties with Site emergency management responsibilities (i.e. USEC, UDS, DOE, DOE ER Contractor, DOE Infrastructure Contractor, etc.). Emergency response assignments correspond as closely as possible to daily duties. Primary and alternate personnel are assigned to key emergency response organization positions. Assignments are updated periodically.

The initial emergency response organization consists of the USEC plant emergency squad with the PSS, or other qualified individual as Incident Commander (IC). Upon

assessment of the event, and if conditions warrant, the event will be classified as an Alert or Site Area Emergency by the PSS assuming the role as event Crisis Manager (CM). If the site EOC is activated for an event and declared operational, the PGDP General Manager, or designee, relieves the PSS as CM and the overall control of the emergency shifts from the PSS to the CM in the EOC. If the EOC is not activated, the PSS maintains responsibilities of CM. In the event that the Plant EOC is activated or an emergency event has the potential to impact UDS operations, then the UDS EMC is also activated. A designated individual will be appointed by DOE to represent and flow information between the Paducah Site EOC and the UDS EMC.

Transition and turnover of command and control authority and responsibility of the CM by the PSS is conducted in a formal manner by use of specially developed procedural checklists and, if possible, face-to-face briefings. Primary and alternates are identified for the key positions.

The line of succession for the site's CM's position is as follows:

- PSS
- USEC General Manager
- USEC Plant Manager
- Others as designated by the USEC General Manager and trained and qualified as CM

Due to the importance of some emergency responsibilities, these responsibilities may be performed only by the emergency response organization position assigned to address them. The following responsibilities are transferred when the overall responsibility for emergency response is transferred.

Emergency Classification — Initially this is a PSS responsibility as CM. After the EOC/EMC is operational, this responsibility is transferred from the PSS to the CM in the EOC with advise from UDS if it is a UDS related event.

Protective Action Recommendations — This is a PSS responsibility as CM. When the EOC is operational, approval of offsite Protective Action Recommendations is transferred to the CM located in the EOC.

Facility Activation — The PSS is responsible for directing activation of the EOC. The EOC is automatically activated for declared emergencies [i.e., Alert and Site Area Emergency (SAE)], and may be selectively activated for other emergency events.

2.3 Emergency Response Operations

Upon recognition of an emergency at the UDS site, UDS personnel, including UDS subcontractor personnel, will notify the USEC PSS of the event. When notified of an incident at the UDS site requiring USEC emergency response, the USEC PSS, Assistant PSS, or other qualified individual responds to the incident scene as the IC. The IC determines appropriate immediate protective actions to be implemented at the incident scene and near-by areas as necessary. The PSS classifies the event if applicable. If the emergency is classified as either an Alert or SAE, the PSS, as Crisis Manager, activates the EOC. The PSS or designee, such as the Cascade Coordinator, as offsite communicator, in the central control facility (CCF), is responsible for implementing call-out of the EOC staff and appropriate UDS

response personnel, as necessary, offsite emergency notifications, and technical communications with offsite government authorities.

Capability for onsite emergency response is provided by the USEC plant emergency squad consisting of the following:

- PSS personnel
- Plant security personnel
- Fire Services personnel, and
- Operating shift, non-supervisory, supervisory, and specialist personnel.

Within the plant emergency squad are personnel who have experience and are trained in firefighting, hazardous materials (HAZMAT) response, emergency medical treatment, health physics/radiation protection and environmental response.

The site EOC cadre provides the external support required by the IC and on-scene emergency response organization and provides information to Federal, State, and local governmental agencies. Specifically, the EOC and EMC provides additional technical expertise in engineering, radiological/hazardous materials monitoring and assessment, logistics support such as transportation, food, communications, materials and supplies, and other needed services. Responsibilities of key USEC, DOE, and UDS EMC positions are described below:

2.3.1 Crisis Manager (USEC)

2.3.1.1 Maintains overall strategic management of emergency incident response.

2.3.1.2 Maintains management of non-incident scene activities during an emergency incident.

2.3.1.3 Provides coordination and leadership for the EOC cadre.

2.3.1.4 Defines the classification of all emergencies after the activation of the EOC.

2.3.1.5 Reviews and approves all offsite protective action recommendations.

2.3.1.6 Ensures emergency notifications are made to onsite and offsite personnel.

2.3.1.7 Reviews and approves PGDP/USEC information releases to the media.

2.3.1.8 Coordinates strategic planning for the emergency incident response.

2.3.1.9 Conducts periodic briefings for the EOC cadre.

2.3.2 ES&H Advisor (USEC)

2.3.2.1 Advises the Crisis Manager on the radiological/hazardous materials assessments and environmental concerns and related response activities.

2.3.2.2 Advises the Crisis Manager on protective action recommendations.

2.3.2.3 Coordinates the efforts of the Environmental Safety & Health organization in responding to the needs of the on-scene emergency response forces.

2.3.2.4 Advises Crisis Manager on medical activities such as notification and coordination of offsite medical facilities and medical activities and injuries.

2.3.3 Plant Services Advisor (USEC)

2.3.3.1 Advises the Crisis Manager on activities concerning:

- Mutual aid/letter of agreement/offsite agency support
- Accountability
- Site security status
- Logistics Support

2.3.4 DOE Site Office Lead

2.3.4.1 Provides oversight and guidance to the Crisis Manager and UDS on DOE positions and policies relative to the emergency incident.

2.3.4.2 Communicates significant strategic emergency incident information to DOE personnel located in both Oak Ridge and in Lexington.

2.3.4.3 Reviews and approves emergency public information and press releases for DOE site activities, including UDS operations.

2.3.5 UDS Cylinder Yard Manager or designee (UDS)

2.3.5.1 Responds to the UDS EMC

2.3.5.2 Advises the Crisis Manager on UDS site/technical issues relative to the emergency incident.

2.3.5.3 Coordinates UDS activities and operations in support of the emergency.

2.3.5.4 Reviews and approves UDS emergency public information and press releases.

2.3.5.5 If a UDS facility/site emergency, appoints a recovery manager and oversees recovery operations, as appropriate.

2.3.6 UDS EOC/UDS EMC Site Liaison (DOE appointed)

2.3.6.1 Responds to the Site EOC.

2.3.6.2 Advises the UDS Cylinder Yard Manager and RCM (during construction) on the impact of the incident on UDS operations and facilities.

2.3.6.3 Interfaces with the USEC EOC cadre and UDS EMC cadre regarding health and safety concerns, such as protective actions, etc.

2.3.6.4 Assists the UDS Cylinder Yard Manager and during construction activities the Resident Construction Manager (RCM) in determining effects to UDS site personnel and facilities from the emergency incident.

2.3.6.5 Assists the UDS Cylinder Yard Manager in support of emergency public information development relating to the emergency events impacting UDS facility operations/activities.

The JPIC is normally activated for events that may generate significant interest from the media, and automatically for events declared as a Site Area Emergency. This organization provides for timely information dissemination to the media and public regarding facility emergencies. The emergency public information program is described in Section 10.0, Public Information. USEC and other contractor personnel staff JPIC positions in support of a DOE emergency requiring JPIC activation. However, a UDS spokesperson position will be staffed by UDS and/or DOE personnel and will be responsible to the DOE Site Office Lead and the UDS Cylinder

Yard Facility Manager and/or RCM for emergency information dissemination regarding DUF_6 events to the media.

The UDS Spokesperson will act as UDS/DOE's designated spokesperson at the JPIC. The Spokesperson will conduct media briefings and follow-up interviews as required and coordinate response to requests for conversion plant event information.

At the facility level, UDS has designated a facility/area Local Emergency Director (LED) and emergency wardens to provide assistance to UDS employees, subcontractors, and visitors during emergency situations involving the UDS facility/area and to interface with site emergency response personnel, i.e., USEC Incident Commander and plant emergency squad, regarding facility and personnel status. The responsibilities and response actions of the facility LED and Emergency Wardens are outlined in the appropriate UDS Facility/Employee Emergency Action Plan (EAP).

3 OFFSITE RESPONSE INTERFACES

3.1 Overview

The severity of some emergencies may warrant the utilization of offsite individuals, organizations, and agencies. As a result, letters of agreement have been entered into with offsite groups to provide assistance in the event of an emergency situation at the Paducah DOE reservation. These support services encompass areas such as medical assistance, fire control, evacuation, ambulance services, and law enforcement. When the USEC PSS or Crisis Manager determines that offsite assistance is needed, the appropriate organization is notified and assistance is requested. The site police personnel provide site access control and ensure escort support is provided, as needed, for the responding offsite organizations. Necessary emergency information will be provided to the responding organizations, including potential hazards associated with the incident.

The offsite emergency support organizations are described in the following subsections.

3.1.1 Medical Support

In certain instances, medical emergencies may require the transport of an injured person from the Paducah DOE reservation to an offsite medical facility. Transportation of injured persons to the medical facility is normally provided by the site's onsite ambulance. In the event the onsite ambulance is not available, commercial ambulance service provides the transportation of injured persons to the offsite medical facility. This includes contaminated injured onsite workers. The primary medical facilities for injured personnel, with or without contamination, are the Western Baptist Hospital and Lourdes Hospital, both located in Paducah approximately 14 and 12 miles respectively from the plant site. These hospitals have agreed to accept injured personnel and/or victims of radiation/hazardous materials-related accidents for emergency medical and surgical treatment and observation. Notification of these hospitals of the need for offsite assistance is performed by telephone or radio by USEC emergency response personnel.

3.1.2 Fire Support

When a determination that offsite fire support is needed, the applicable offsite fire departments are alerted. Notification of offsite fire fighting assistance is made by means of a telephone call to the McCracken County 911 Emergency Operations Center or by plant radio.

The offsite fire departments include the Paducah Fire Department, located approximately 12 miles from the Paducah DOE reservation; Lone Oak Fire District, located 15 miles from the reservation; and West McCracken County Fire District, located 1.75 miles from the reservation. These fire-fighting groups will furnish the site with fire fighting personnel and necessary resources as requested and if possible. As assistance is being rendered onsite by the offsite organizations, each offsite fire department is under the immediate control of its respective officers. The fire departments are under the general direction and control of the USEC IC, who retains responsibility for the overall on-scene emergency response effort. In instances where offsite fire fighting assistance is needed to fight a fire involving radioactive/hazardous materials, knowledgeable members of the site's ERO provide radioactive/hazardous materials/toxicological information and/or assistance.

3.1.3 Law Enforcement Assistance

The nature of an emergency at the Paducah DOE reservation may require that the local law enforcement agencies be activated to assist in the emergency response effort. The Paducah Police Department, McCracken County Sheriff's Department, and the Kentucky State Police have agreed to provide local law enforcement assistance when possible. The emergency support may include:

- Ensuring that reasonable and appropriate steps are being taken to protect the public health and safety and to mitigate the accident,
- Controlling access to areas affected by the emergency,
- Responding to bomb threats.

3.2 Coordination with Participating Government Agencies

The close coordination between the local, State, and Paducah site emergency plans serves to better ensure the safety and health of the general public. It also enables all emergency organizations to participate in the emergency effort with a minimum of confusion and hesitation. During an emergency effort, participating agencies must have a clear picture of their responsibilities, which is provided for in their respective emergency plans and procedures.

USEC coordinates required emergency planning activities directly with these organizations and agencies for the DOE Paducah Reservation. USEC emergency management personnel meet annually with offsite response organizations to review emergency plans and procedures and any changes relevant to the site's emergency management program. Site emergency action levels, notifications, and the overall response coordination process are discussed at these meetings. Any changes in emergency planning agreements between the offsite organizations and the site are coordinated with the DOE Site Office and DOE contractor organizations.

Response roles of the key agencies are summarized below.

3.2.1 Commonwealth of Kentucky Government Interfaces

The Commonwealth of Kentucky Emergency Operations Plan provides guidance on dealing with all types of disasters or emergency incidents. Annex X of the state plan outlines the state and county response to incidents at the Paducah DOE site. The Kentucky Division of Emergency Management is responsible for coordinating overall state response and overseeing the local implementation of recommended protective actions. The Kentucky Division of Emergency Management assists the Governor in formulating policy, establishing priorities, gathering and analyzing information, monitoring the execution of planned actions, and directing modifications as necessary. The Kentucky State Police assists in coordinating security emergencies and provides support to site security and offsite law enforcement actions as requested. Kentucky Environmental and Public Protection Cabinet coordinates environmental hazard assessment and is the principal contact for technical information and recommendation of protective actions. The Kentucky Division of Waste Management oversees removal and disposal of hazardous waste generated as a result of a Paducah facility emergency. The Kentucky State Fire Marshal provides technical advice on hazardous materials incidents and large structural fires. The Kentucky Cabinet for Health and Family Services is the cognizant state agency for incidents involving the release of radiological materials offsite.

The Commonwealth of Kentucky has a permanent EOC in Frankfort that has been designed and equipped to be the direction and control center for all major emergencies in the state. The EOC is manned 24 hours a day by trained operations duty officers and has the capability to provide almost instantaneous communications with the governor and key state officials.

3.2.2 Local Government Interfaces

Depending upon the jurisdictions involved, the McCracken County judge-executive or the mayor of Paducah has overall responsibility and authority for administering offsite emergency responses as well as drills and exercises. They serve as the chief executive officers for their local governments during an emergency. The judge-executive and mayor are supported by the city-county EOC staff.

The Paducah-McCracken County Office of Emergency Management (OEM) director serves as the chief of staff for the county judge-executive and mayor's EOC staff. The director is responsible for ensuring the Paducah-McCracken County EOC is fully functional. In addition, the director is responsible for coordinating local government emergency management planning and response activities.

The county judge-executive, mayor, or OEM director can authorize the opening and staffing of the Paducah-McCracken County EOC. The EOC may be open and staffed due to the threat of an emergency or an actual emergency. Minor emergencies may be directed by agency officials from their normal workstations.

Local fire services off-site assistance will be coordinated with the director and staff in the Paducah-McCracken County EOC or the appropriate off-site agency. Letters of agreement exist with the local law enforcement agencies when additional security/law enforcement support is necessary.

A notification and warning point has been established for each local government (Paducah and McCracken County). Local governments coordinate response efforts from the Paducah-McCracken County EOC.

3.2.3 Federal Government Interfaces

3.2.3.1 DOE

DOE provides nuclear safety oversight for those activities on the DOE reservation involving DOE facilities and operations. Events involving DOE operations or property are reported to DOE's Oak Ridge Operations Center (OROC). DOE maintains various emergency response assets capable of providing radiological monitoring and support assistance during an emergency. The Portsmouth-Paducah Project Office located in Lexington, Kentucky will be notified as soon as practical by either the DOE Site Representative of the highest ranking UDS manager available and as soon as practical.

3.2.3.2 FBI

The FBI has jurisdictional authority at the Paducah DOE reservation for safeguards and security events involving violations of federal criminal law. A representative of the FBI may assume command and control of these types of incidents. The FBI will coordinate all responding federal law enforcement agencies.

3.2.3.3 Federal Aviation Administration (FAA)

The FAA restricts airspace over the Paducah plant site at the request of the CM or the PSS, as appropriate.

3.2.3.4 U.S. Coast Guard (USCG)

The USCG functions as the federal authority on all navigable waterways and their tributaries. The USCG commander of the Ohio River Group will control all waterway traffic and coordinate response to emergencies on behalf of the U. S. Environmental Protection Agency (EPA).

3.2.3.5 Federal Emergency Management Agency (FEMA)

FEMA is the primary federal government agency for the administration of planning, preparedness, operational coordination, and recovery programs.

3.2.3.6 U. S. Environmental Protection Agency (USEPA)

The USEPA is the major federal government agency for the regulation and control of pollution and waste management programs. USEPA provides the federal on-scene coordinator for significant hazardous materials incidents.

3.2.3.7 U. S. Occupational Safety and Health Administration (OSHA)

OSHA is the primary federal government agency for the regulation of non-radiological worker safety.

4 EMERGENCY CATEGORIZATION & CLASSIFICATION

The technical basis for an emergency management program is derived from the assessment of hazards associated with a facility's operations. Emergency response

planning at the Paducah DUF_6 Conversion Plant is based on the potential facility's hazards and consequences associated with the hazards.

The types of emergency situations that could occur at the conversion plant include, but are not limited to the following:

- Fires.
- Industrial accidents.
- Equipment failures or mis-operation.
- Diesel/oil spills and other environmental releases.
- Natural phenomena (e.g., tornadoes, earthquakes, severe weather storms, etc.)
- Security-related events (e.g., bomb threats, demonstrations, work place violence, etc.)

Hazards applicable to the UDS Facility and Cylinder Yards will be identified and documented. Each potential accident and hazard that could result in an emergency situation will be analyzed to establish the potential of affecting workers, the public, the environment, and property. When additions or deletions are made to any of these documents, corresponding hazards analyses, elements of emergency planning and preparedness, and consequence assessments are reviewed to ensure that the emergency management program is updated and current.

4.1 Descriptions of Emergency Classes

Operational emergencies are unplanned, significant events or conditions that require time-urgent response from outside the immediate/affected site/facility or area of the incident. Such emergencies are caused by, involve, or affect DOE facilities, sites, or activities and represent, cause, or have the potential to cause the events or conditions described below. Incidents that can be controlled by UDS facility employees in the immediate/affected facility or area are not Operational Emergencies. Incidents that do not pose a significant hazard to safety, health, and/or the environment and that do not require a time-urgent response by emergency response personnel are not Operational Emergencies. The purpose of categorizing events as Operational Emergencies and of classifying hazardous material events ensures rapid recognition of emergency conditions and timely response.

Emergencies are significant accidents, incidents, events, or natural phenomena that have, or can potentially, seriously degrade the safety or security of the conversion plant facility. Emergencies are further divided into classes by degree of severity depending on the actual or potential consequence of the emergency situation. DOE Order 151.1B indicates different classifications of operational emergencies.

Since USEC, a private corporation governed by the Nuclear Regulatory Commission (NRC), provides site-wide emergency response services to DOE on the Paducah site, the emergency classification levels used at the site are different from those defined in the DOE regulations. The Paducah DOE Site Office received direction from the Assistant Manager for Enrichment Facilities, DOE Oak Ridge Operations on January 30, 1997, to implement USEC's emergency classification system described in the Nuclear Regulatory Commission's (NRC) 10CFR76.91 regulations for gaseous diffusion plants. Prior to receiving this direction, two (2) different emergency classification systems were being implemented on the Paducah DOE reservation: 1)

the NRC two-class system, as defined in 10CFR76.91, implemented by USEC for the leased PGDP facilities, and 2) the DOE three-class system (Alert, Site Area Emergency, and General Emergency), required by DOE Order 151.1, for the DOE non-leased facilities. The direction assigned by DOE Oak Ridge allowed for emergencies on the Paducah DOE reservation, regardless of ownership, to be classified by the USEC PSS using a single classification system.

The site classification levels are a composite of the two classification systems, both DOE and NRC. The variation utilized herein is consistent with NRC regulations and maintains compliance with DOE requirements as agreed to by DOE (Parks 1997). The NRC classification system does not use the General Emergency classification; an Alert signifies an event with onsite consequences and the Site Area Emergency (SAE) signifies an event with offsite consequences. Therefore, an Alert is defined as an event having on site consequences only while a SAE is defined as an event that results in a release that exceeds the recommended values as listed in US EPA PAG for radiological releases or the AIHA ERPG-2 levels for chemical releases.

The emergency classification system provides for the notification and implementation of actions immediately applicable to a specific emergency condition, and for upgrading or terminating the response accordingly in the event of a change in the severity of the condition. These actions are further described in the following sections.

An “Alert” is defined as an incident that has led or could lead to a release to the environment of radioactive or other hazardous material. Such a release is not expected to require a response by an offsite response organization to protect the general public offsite. An Alert involves emergency situations that could have a direct effect on the health and safety of personnel onsite. Classification of an emergency as an Alert requires the activation of the on-site emergency response organization including the EOC cadre and other appropriate personnel and resources as necessary to mitigate the consequences of the emergency conditions, monitor the situation, and ensure protection of on-site and off-site personnel. An Alert (especially one involving the Paducah DUF6 Conversion Plant) may require activation of the UDS EMC.

The most severe classification used in emergency planning at the Paducah site is the Site Area Emergency. A “Site Area Emergency” is defined as an incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material. Such an incident could require response by an offsite organization to protect persons off the Paducah DOE reservation (offsite).

A Site Area Emergency could result in offsite releases that exceed the Environmental Protection Agency (EPA) PAGs for radiological releases or ERPGs for toxic materials releases. Classification of the emergency as a Site Area Emergency requires the activation of the onsite emergency response organization, including the EOC cadre, and other appropriate personnel and resources as necessary to mitigate the consequences of emergency conditions, monitor the situation, and ensure protection of onsite and offsite personnel. A Site Area Emergency (especially one involving the Paducah DUF6 Conversion Plant) may require activation of the UDS EMC. The nature of Site Area Emergencies requires prompt protective actions for onsite personnel in the vicinity of the incident area and may require protective response measures for major portions of the DOE reservation or off site.

Paducah DUF_6 Conversion Plant operational emergency events that do not meet the criteria for an Alert or Site Area Emergency under this system are not formally classified, but are responded to by plant emergency response personnel, and are reported through UDS reporting and notification procedures for UDS events. Although these non-classified events do not require the activation of additional emergency response resources, the USEC PSS, in consultation with UDS site management, may request activation of the site EOC and/or UDS EMC in support of the emergency at their discretion.

The following discussion provides examples and criteria for Operational Emergencies applicable to the conversion plant:

4.2 Health and Safety Events

The following events or conditions represent, cause, or have the potential to cause serious health and safety impacts to workers or members of the public.

- Radioactive or other hazardous material contamination that is causing or may reasonably be expected to cause uncontrolled personnel exposures exceeding protective action criteria.
- An offsite hazardous material event not associated with DOE operations that is observed to have or is predicted to have an impact on a DOE site such that protective actions are required for onsite DOE workers.
- An occurrence that causes or can reasonably be expected to cause significant structural damage to DOE facilities, with confirmed or suspected personnel injury or death or substantial degradation of health and safety.
- Any facility evacuation in response to an actual occurrence that requires time-urgent response by specialist personnel, such as hazardous material responders, and/or other off-site emergency response organizations not normally assigned to the affected facility.
- An unplanned nuclear criticality resulting in actual or potential facility damage and/or release of radioactive material to the environment.
- Any non-transportation-related mass casualty event.

4.3 Environment

The following events or conditions represent, cause, or have the potential to cause serious detrimental effects on the environment.

- Any actual or potential release of hazardous material or regulated pollutants to the environment, in a quantity greater than five times the Reportable Quantity (RQ) specified for such material in 40 CFR 302, that could result in significant offsite consequences such as major wildlife kills, wetland degradation, aquifer contamination, or the need to secure downstream water supply intakes.
- Any release of greater than 1000 gallons (24 barrels) of oil to inland waters, greater than 10,000 gallons (238 barrels) of oil to coastal waters, or a quantity of oil that could result in significant offsite consequences (e.g., need to relocate people, major wildlife kills, wetland degradation, aquifer contamination, need to secure downstream water supply intakes, etc.). (Oil, as defined by the Clean Water Act [33 U.S.C. 1321], means any kind of oil and includes petroleum.).

4.4 Security and Safeguards

The following events or conditions represent, cause, or have the potential to cause degradation of security or safeguards conditions with actual or potential direct harm to people or the environment.

- Actual unplanned detonation of an explosive device or a credible threatened detonation resulting from the location of a confirmed or suspicious explosive device.
- An actual terrorist attack or sabotage event involving a DOE site/facility or operation.
- Kidnapping or the taking of hostage(s) involving a DOE site/facility or operation.
- Actual theft or loss of a Category I or II quantity of Special Nuclear Materials (SNM) or other hazardous material that, if released, could endanger workers, the public, or the environment.
- Damage or destruction of a site or facility by natural or malevolent means sufficient to expose classified information to unauthorized disclosure.

4.5 Offsite DOE Transportation Activities

The following events or conditions represent an actual or potential release of radiological or non-radiological hazardous materials from a DOE shipment.

- The radiation dose from any release of radioactive material or the concentration in air from any release of other hazardous material is expected to require establishment of an initial protective action zone. (“Initial protective action zone” is defined in DOT NAERG, as amended or updated, *North American Emergency Response Guidebook*).
- Failures in safety systems threaten the integrity of a nuclear weapon, component, or test device.
- Damage to a nuclear explosive, nuclear explosive-like assembly, or Category I/II quantity of SNM as a result of a transportation accident.

4.6 Emergency Action Levels (EALs)

Emergency Action Levels (EALs) are used to provide indication that an initiating condition exists. EALs are composed of a combination of facility parameters (such as instrument readings and alarms) that can be used to give relatively quick indication to the facility staff of the severity of the accident situation. The purpose of the EALs is to provide the earliest possible indication of actual or potential accident situations. EALs associated with radiological and/or non-radioactive hazardous materials releases are related to the Environmental Protection Agency's Protective Action Guides (PAGs) summarized in EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," and the Emergency Response Planning Guides (ERPGs) established by the American Industrial Hygiene Association for extremely hazardous chemicals. A determination by the emergency response organization of the potential of reaching or exceeding the PAGs and/or ERPGs is performed in accordance with dose assessment procedures in the event of a radiological/hazardous materials release to the environment.

EALs developed through the emergency management hazards assessment (EMHA) document for the cylinder yards will become the responsibility of UDS. In addition, prior to conversion plant operations, EALs will be developed to address the spectrum of accidents analyzed in the conversion plant EMHA.

Since USEC provides primary emergency response services across the Paducah DOE site, all site EALs are contained in the USEC emergency plan implementing procedure CP2-EP-EP5055, "*Emergency Classification*." All UDS facility EALs will be submitted to USEC for inclusion in the site's emergency classification procedure.

5 NOTIFICATIONS AND COMMUNICATIONS

5.1 Notification

The initial step in declaring an emergency is to recognize that an unusual condition exists or has the potential for existing. The site's Emergency Action Levels and Operational Emergency guidelines, as described in Section 4.2, provide the criteria for determining when an abnormal situation exists that require the declaration of an emergency and the subsequent activation of the applicable portions of the emergency response organization.

Upon classification of an emergency, the USEC PSS, as Crisis Manager, makes the predetermined emergency notifications and activates the appropriate portions of the emergency response organization. During normal working hours, emergency response personnel are immediately notified of the emergency by telephone, pagers, plant radio, and/or facility public address system. Emergency personnel report to their designated emergency response locations/facility immediately following the emergency notification while other facility personnel follow instructions as provided by the PSS, or designee. Outside of normal working hours, emergency response personnel are notified by telephone and/or pager and directed to respond to their respective emergency response facilities.

All facility personnel, including contractors and visitors, receive training regarding alarm response and instructions.

If the event requires a formal declaration of an emergency, i.e., Alert or Site Area Emergency, the Crisis Manager, or designee, conducts initial emergency notifications to offsite authorities as soon as possible, within 15 minutes of emergency declaration. Additional emergency information is provided to offsite authorities periodically as new information becomes available. Notifications to offsite authorities will be provided when a change in emergency classification occurs and when protective action recommendations offsite are required. USEC has developed a pre-formatted form used for offsite notifications and is included in the USEC emergency plan implementing procedure for emergency notifications. Copies of the notification form are available in the site and offsite emergency response centers. The notification form was developed in cooperation with offsite officials and is reviewed periodically for necessary changes.

Information provided in emergency notifications to offsite authorities include facility status conditions, radiological/hazardous materials release data, recommendations for protective actions to be implemented by offsite response organizations, and other applicable emergency information as necessary. Protective response actions offsite

are the responsibility of government authorities. Offsite protective action recommendations are discussed in Section 7.

The USEC PSS, as Crisis Manager, ensures that DOE, State and local agencies listed below, at a minimum, are notified within 15 minutes of the initial emergency declaration:

- Paducah-McCracken County Office of Emergency Management
- Kentucky Division of Emergency Management
- DOE - Oak Ridge Operations Center

5.2 Communications

This section describes the communications systems in place to support emergency response on the Paducah DOE reservation. The communications systems are designed to ensure the reliable, timely flow of information and action directives between all parties having jurisdiction and a role to play in the mitigation of emergencies on the DOE reservation.

Reliability is provided via (1) extensive redundancy, (2) dedicated communication equipment to preclude delays due to system overload, and (3) routine use and testing of many of the systems, which lowers the probability of undetected system failures.

The essential communications links are manned continuously and are periodically tested to assure availability. The PSS has full command and control of all communications equipment. The communications systems in place are described below.

5.2.1 Onsite Communications

Telephone and radio systems serve as the primary emergency communications systems. Maintenance and operational testing of primary and alternate communications systems are described in Section 12. Below are descriptions of the onsite communication systems at the Paducah site.

5.2.2 Telephone Systems

The administrative telephone system provides business and emergency communications. The emergency related phones are tested periodically.

Cellular telephone service is available from the plant site. The PSS and Assistant PSS emergency response vehicles are equipped with cellular telephones. This system also provides backup for the plant telephone system.

5.2.3 Public Address (PA) System

A site-wide PA system is in place with capability to cover most occupied site buildings and surrounding areas. During emergencies, the system is not used for routine traffic. The system is tested daily. Two-way radios and runners are used to communicate with areas not covered by the PA system. The PSS has the ability to key the plant PA system and also simultaneously broadcast on the Plant radio system (“all call” capability).

5.2.4 Radio Systems

The plant radio system network supports normal plant operations, and, therefore, is effectively utilized daily. The PSS and Assistant PSS response vehicles are equipped with two-way radios.

5.2.5 Pager System

Key EOC and EMC personnel have pagers that provide access from any tone-type telephone and can relay return telephone numbers or coded responses to the holder of the unit. EOC and EMC cadre pager drills are conducted at least quarterly. Pagers are used frequently for non-emergency uses, which enhances the regular testing program.

5.2.6 Facsimile Machines

The facsimile machines located in the EOC and EMC are used to communicate with response organizations, including federal, state, and local agencies.

5.3 Offsite Communications

The site uses the commercial telephone system for offsite emergency communications. Cellular telephones can be used as a backup to the commercial telephone system.

The Public Warning System, consisting of outdoor warning sirens and emergency alert system announcements, is used to provide emergency notification. Operations testing of the Public Warning System is conducted monthly.

6 CONSEQUENCE ASSESSMENT

This section describes the processes used for assessing the actual or potential consequences of an emergency at the Paducah DOE reservation. Initial and extended assessment actions are the responsibility of the USEC PSS as Incident Commander (IC). Post-accident assessments are a shared responsibility between the IC, Crisis Manager, and recovery manager (RM) if assigned. In support of emergency assessment in the EOC, the UDS EMC, and other requested UDS personnel will provide necessary assistance to the Crisis Manager and staff during emergencies involving the DUF_6 conversion plant and/or its operations.

Continuous assessment throughout the course of an emergency is necessary to effectively coordinate and direct the elements of the emergency response organization. The initial assessment actions are dictated, in part, by the nature and severity of the emergency. Emergency assessment provides an indication of the vulnerability of life, the environment, and property to injury or damage if an emergency occurs.

Appropriate mitigative actions are performed by response personnel who are technically trained and capable of implementing the facility's emergency plan and procedures. UDS personnel will also be trained to take appropriate mitigative actions to support emergency response personnel as necessary. UDS personnel will provide guidance, as appropriate, to site emergency response personnel in order to ensure technical information is readily available. Site emergency procedures have been established by USEC to provide effective response to the various emergency situations. During any emergency condition, the primary concern is to minimize the impact to facility personnel and the general public. By initiating prompt protective

actions such as evacuating personnel in the immediate incident area(s) and controlling access to the surrounding accident vicinity, consequences to facility workers as well as the general public are minimized. Additional information on protective actions is provided in Section 7.0, Protective Actions.

7 PROTECTIVE ACTIONS AND REENTRY

7.1 Protective Action Guides and Emergency Response Protective Guides

During emergency situations, the USEC Incident Commander or CM must determine the best possible means to limit exposure of onsite and offsite personnel to potential or actual threats, such as radioactive or toxic materials that may be accidentally released to the environment. Guidelines are provided to limit the exposure of personnel in the case of accidental releases to the environment. These guidelines are prescribed corresponding to potential health effects and are called Protective Action Guides (PAGs) for radioactive materials and Emergency Response Planning Guidelines (ERPGs) for hazardous materials. Emergency response procedures have been developed for the protection of emergency workers and other onsite and offsite personnel. In addition, the UDS Facility/Employee Emergency Action Plan (EAP) provides emergency response and protective actions to be taken by facility personnel, including visitors, in emergencies involving or impacting the conversion plant site.

This section describes the protective actions developed to limit exposure of personnel and the public following an emergency on the Paducah DOE reservation. Protective action decision-making and implementation for onsite personnel are the responsibility of Paducah site authorities. During unlikely emergencies requiring protective actions to be implemented offsite, appropriate offsite authorities, primarily Paducah-McCracken County Office of Emergency Management, are responsible for implementing offsite protective actions to protect the general public.

Exposure guidelines for radiological emergencies are consistent with the Environmental Protection Agency's Protective Action Guides (PAGs) summarized in EPA 400-R-92-001, “Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.” Exposure guides for toxic/hazardous chemicals are consistent with the Emergency Response Planning Guides (ERPGs) established by the American Industrial Hygiene Association for extremely hazardous chemicals. USEC has developed site emergency response procedures to implement radiological and toxic/hazardous chemicals exposure guidelines consistent with the EPA PAGs and American Industrial Hygiene Association’s ERPGs.

Although radiological exposures in excess of the normal administrative limits may be authorized, all exposures are kept ALARA.

For hazardous material/toxic gas release incidents, the IC and site emergency response personnel will determine the area with an atmospheric concentration of gas that exceeds the ERPG limits for the involved chemical(s) and takes appropriate protective and mitigative response actions. USEC emergency plan implementing procedures provide the emergency response planning guidelines for the exposure limits to the applicable toxic gases/hazardous materials on the Paducah site.

7.2 Monitoring and Decontamination of Personnel

USEC has made provisions for 24-hour-per-day capability to determine uranium uptakes received by their emergency response personnel. Personnel who may be required to respond to the scene of an emergency are required to wear thermoluminescent dosimeters (TLDs). Emergency worker dose records are maintained in accordance with USEC radiological protection procedures.

Onsite personnel decontamination facilities for emergency conditions are equipped with decontamination material and necessary supplies. The primary means of decontamination is through the use of equipment and supplies carried on emergency response vehicles.

All personnel exiting from a radiologically controlled area are monitored for contamination. The instruments used for this monitoring procedure are portable contamination survey instruments. In situations when personnel contamination is detected, preventive measures must be initiated to mitigate the possibility of the spread of contamination. A qualified radiological control technician (normally a member of the USEC E-squad-but may be a UDS RCT assisting the E-squad at the E-squads request/direction) will supervise any decontamination effort.

7.3 Personnel Evacuation and Accountability

Protective response for onsite personnel (including visitors and subcontractor personnel) includes alerting, assembly and accountability, sheltering-in-place, evacuation, monitoring, and decontamination. As previously described, the primary concern is to minimize the impact to facility personnel and the general public.

When an emergency situation impacting the DUF_6 conversion plant is recognized, personnel are advised immediately via public address system, telephone, and/or two-way radio network. Whenever it is determined that a threat to the safety of facility personnel exists, an evacuation from the affected area is ordered by the USEC PSS/IC, Crisis Manager, and/or the UDS LED and Emergency Wardens. The evacuation alarm and announcement, including any special instructions, is sounded over the site's public address system, telephone and/or two-way radio system.

At the discretion of the PSS/IC, Crisis Manager, or UDS LED, facility personnel, visitors and subcontractors will proceed to an assembly area designated in the UDS facility/area emergency action plan, or as directed by the PSS/IC, Crisis Manager, or UDS LED.

Emergency situations include natural events, such as severe weather emergencies and earthquake events. Site emergency plan implementing procedures include response actions to be followed in these situations. The UDS facility emergency action plan also contains specific instructions for conversion plant workers, including visitors, to follow during natural phenomena incidents impacting the UDS site.

During an emergency, one of the most probable protective actions for facility personnel, including contractors and visitors, is evacuation of an area or site. In the event of an evacuation, it is essential to know that personnel have been positively located or accounted for. This must be exceptionally dependable, since search and rescue operations may be initiated if a person(s) is determined to be missing.

Site emergency plan implementing procedures on accountability provide the framework to ensure a prompt and accurate accountability of facility personnel during incidents involving the health, safety, and security of employees. To ensure

proficiency on roles and responsibilities, site personnel participate in periodic accountability drills.

Site employees and subcontractor personnel are trained on actions to be taken in an emergency before their work assignments. The training includes instructions on methods of notification and the required actions in the event of an emergency, and is included as part of the site General Employee Training program.

If an accountability reveals a missing person in an area impacted or potentially impacted by the emergency the IC may assemble a search and rescue team made up of emergency squad members. The search and rescue team will obtain information on the latest known location, and a search of likely areas is conducted until missing persons are located. On-scene direction of the search and rescue teams is provided by the IC, or designee. Teams are thoroughly briefed prior to any entry on their specific mission, route of ingress/egress, area of danger, personal protective clothing/equipment required, and stay times associated with control of exposure to radioactive or hazardous materials.

7.4 Use of Protective Equipment and Supplies

Emergency response personnel entering an area during an emergency where airborne concentrations of contaminants are considered immediately hazardous to life or health, or potentially immediately hazardous to life or health, are required to wear appropriate protective clothing and self-contained breathing apparatus. Personnel assigned emergency response tasks requiring the donning of protective equipment maintain communications with the IC, or designee, via the plant radio system, either by hand-held radio or radios within the self-contained breathing apparatus. Protective clothing and other required personal protective equipment is available throughout the plant at pre-designated areas. Emergency personnel receive training on donning and utilizing specific protective clothing and related equipment. Section 12 describes the emergency management training program.

Emergency kits and other supplies are used to provide monitoring equipment, protective clothing, and respiratory equipment for individuals arriving or remaining at the facility during certain emergency situations. These supplies are on emergency vehicles. Specific procedures dictate the requirements for use of this equipment.

7.5 Contamination Control Measures

The primary means of contamination control utilized onsite is evacuating applicable areas affected, or potentially affected, by the event. Controlling access to and removing non-essential personnel from the areas impacting the incident area provides the most effective measure for site contamination control.

The evacuation procedure is intended to be implemented and completed prior to, or as soon as possible after, releases occurring onsite. Monitoring and decontamination stations are established at designated areas when directed by the IC. USEC emergency squad personnel perform necessary monitoring and decontamination in accordance with site emergency procedures.

When releases occur personnel will be directed to report to designated monitoring/decontamination areas established by USEC emergency responders.

7.6 Offsite Protective Actions

The USEC Crisis Manager is responsible for ensuring that timely recommendations for protective actions reach appropriate local and state officials. Decisions regarding the issuance of protective action recommendations offsite are to be based on accident assessment and a thorough understanding of the actual and potential facility/area conditions.

By prior agreement with offsite authorities, the Crisis Manager has full authority to activate the Public Warning System (PWS) sirens in the event of a release beyond or which threatens to travel beyond the DOE reservation boundary. This activation notification applies to residents and transient members of the public within approximately a two-mile radius from the Paducah plant center, including the Kentucky Wildlife Management Area.

In conjunction with activating the PWS sirens, the Crisis Manager, also, by prior agreement with offsite authorities, contacts the Emergency Alert System (EAS) affiliate to initiate the appropriate EAS announcement. The EAS messages associated with siren activation for nearby residents are to shelter- in-place or advisories that no action is needed. Additionally, the Crisis Manager may recommend that roads that traverse the Paducah DOE reservation be closed.

During the construction phase of the DUF_6 Conversion Plant, the UDS facility and operations will have no postulated accident conditions that will require any protective action off the DOE site. However, the DOE UF_6 cylinder yard operations and maintenance responsibilities do have creditable accident scenarios with potential off site impacts. Additionally, when the conversion plant is preparing to begin initial plant operation, pre-determined protective actions, including possible offsite protective action recommendations will need to be developed in conjunction with the new facility EALs as discussed in Section 4.

8 EMERGENCY MEDICAL SUPPORT

The Paducah site maintains medical coverage consistent with the activities being conducted onsite. In an emergency, off-duty medical personnel are notified and directed to required locations as needed. The USEC PSS notification procedure includes alerting appropriate occupational health services and medical personnel in the event of emergencies ranging from industrial accidents to toxic or radiological releases. A summary of plant medical resources follows.

A plant medical facility is maintained by USEC onsite during the day-shift, excluding weekends and holidays. This facility has the supplies, equipment, and personnel to treat most injuries. This includes capabilities for treatment of contaminated individuals including: a shower for contaminated ambulatory patients, radiation survey instruments and decontamination supplies. This facility is located within the security protected area fence in Building C-102. Medical personnel assess patient condition, provide necessary emergency care, and determine appropriate supplemental treatment.

USEC health services personnel are available during the day shift hours with plant fire fighters providing emergency medical coverage the remainder of the time. USEC health services personnel may be called to respond onsite during off-shifts, as deemed necessary.

UDS and UDS subcontractor personnel may be treated at the plant medical facility with fire services personnel acting as the security escorts.

In the event of a serious incident on the Paducah DOE reservation requiring medical treatment, Western Baptist Hospital and Lourdes Hospital, both located in Paducah, Kentucky, have agreed to provide the required assistance. The hospitals are equipped to handle contaminated injuries as well as injuries not related to contamination or over exposure. Upon request from the hospitals, USEC health physics personnel are dispatched to assist in contamination control, and decontamination of the patient(s), hospital staff, and hospital facilities/equipment. Letters of Agreement between the hospitals and USEC have been obtained to document these arrangements.

Injured employees are normally transported to the onsite medical treatment facility using a plant ambulance. USEC maintains two ambulances that meet U. S. Department of Transportation (USDOT) Emergency Medical Service standards. These vehicles are located in Building C-200, and are available on a 24-hour basis. Two ambulances are normally available onsite at all times and USEC emergency medical technicians (EMTs) provide patient care. In the event that an onsite ambulance is unavailable, the local offsite ambulance service provides the transportation of injured persons to an offsite hospital.

Contaminated injured persons are decontaminated prior to transport if medical conditions permit. In the event that contaminated injured persons must be transported, contamination control materials and measures are taken to protect response personnel and to prevent contaminating the ambulance.

9 EMERGENCY TERMINATION AND RECOVERY

During any emergency involving conversion plant assets, the immediate action is directed toward limiting the consequences of the incident in a manner that affords the maximum protection to site personnel and the general public. Once the corrective and protective actions have established an effective control over the situation, emergency conditions no longer exist, and the emergency is officially terminated by the CM with the concurrence of the Kentucky Division of Emergency Management, the emergency response shifts into the recovery phase that is managed by UDS personnel.

It is the responsibility of the Crisis Manager, or PSS in consultation with DOE and the UDS Cylinder Yard Manager, to determine when the Recovery Phase of the emergency can be initiated. The following Paducah site emergency termination criteria are considered, when appropriate to the circumstances, prior to initiating recovery:

- If classified as an emergency, event conditions no longer meet any emergency classification criteria (EAL).
- The affected facility/area is in a stable condition and can be maintained in that condition, indefinitely.
- Fire or other similar emergency conditions no longer constitute a hazard.
- Releases of hazardous materials to the environment have ceased or are controlled.

- Discussions with the on-scene emergency response organization, DOE Site Lead, UDS management, and appropriate offsite (Local/State/Federal) agencies if necessary, do not identify a valid reason to continue in any emergency classification.
- State and local authorities must be notified of the Site's intention to terminate an emergency event. Concurrence of this event termination must be obtained prior to officially terminating the emergency.

9.1 RECOVERY

The nature and extent of the emergency determines what recovery operations are required and the extent of the recovery organization that must be formed. A recovery plan must be flexible enough to adapt to the existing conditions. It is not possible to anticipate in advance all of the conditions that may be encountered as a result of the emergency. General principles are addressed in this section that serves as a guide for developing a flexible plan of action.

Recovery includes those actions necessary to return the incident site and the surrounding environment to their pre-emergency condition.

The conduct of recovery operations may include the following activities appropriate to the type of emergency and post-emergency situation:

- Development of special procedures and training to meet requirements of recovery operations.
- Monitoring for hazardous materials contamination.
- Control and decontamination of site buildings or the environment.
- Public and media releases.
- Dissemination of information on hazardous material releases and meteorology to the applicable State agencies.

UDS is responsible for planning and implementing recovery activities for Paducah DUF_6 Conversion Plant emergencies. The Paducah DOE Site Lead is responsible for ensuring the adequacy and appropriateness of recovery operations. Planning for recovery should address the recovery strategy, recovery organization assignments, and any logistics support needs.

9.2 Recovery Organization

Prior to termination of an emergency which impacts conversion plant facilities/activities and deactivation of the emergency response organization, a UDS recovery organization is established to implement recovery plans. This organization is managed by a recovery manager who has overall responsibility for recovery activities in restoring the facility/area to normal conditions.

The recovery manager is appointed by the USEC Crisis Manager in consultation with the UDS Cylinder Yard Manager. The Recovery Manager reports to the UDS Cylinder Yard Manager. For construction activities, the Recovery Manager will primarily report to the UDS Cylinder Yard Manager but will be directed by the RCM. Responsibilities of the recovery manager include the following:

- Direction of the transition from emergency response organization to the recovery organization.

- Overall management of the recovery effort.
- Coordination of interactions with vendors and contractors.
- Approval of special procedures and related training.
- Interfacing with offsite federal, state, and local officials.
- Review of press releases.

9.3 Resumption of Normal Facility Activities

A final briefing is held to discuss resumption of normal facility activities and to report on recovery operations for applicable site recovery organization personnel, the DOE Site Lead, and state and local authorities if necessary. All documentation of recovery operations is collected and retained by UDS for permanent storage.

10 EMERGENCY PUBLIC INFORMATION

The Emergency Public Information Program provides the framework to ensure timely and accurate information to the media and general public in the event of an emergency involving the Paducah DUF_6 Conversion Plant project. During the initial phase of an emergency, the decision is made by UDS management to activate the company's emergency public information system that consists of an interim point of contact determined by the Paducah DOE Site Lead and UDS management. These personnel respond to the site UDS EMC (if UDS assigned personnel). The JPIC will be activated by routine USEC procedures in declared emergency events (classified as an Alert or Site Area Emergency) or in unclassified events with on-site or off-site impacts at the request of the Crisis Manager. Initially, a pre-approved press release will be made by the Public Information Advisor in the EOC with the approval of the Crisis Manager with input from the UDS EMC informing the media and public of the situation. If applicable, the press release will include information on the activation of the JPIC. Subsequent press releases may be generated by UDS personnel in coordination with the Public Information Advisor in the EOC. These subsequent press releases shall be approved by UDS management in consultation with the Crisis Manager and the DOE Site Lead or designee. Information will be disseminated as it becomes available and is approved for release.

10.1 Policy

When emergencies may affect onsite personnel, public health and safety, or the environment, it is DOE's policy to provide accurate and timely information to employees, the public, and the news media, as necessary. Except for classified information, DOE maintains an open information policy in releasing accident or other emergency information.

10.2 Overview

Plans, procedures, trained personnel, and equipped facilities are available to provide rapid facility response and sustained information dissemination capabilities for a wide range of incidents in which a high potential for offsite interest or inquiry exists. These plans and procedures provide for the coordinated release of relevant incident-related information to facilitate press reporting responsibilities and to inform the public.

10.3 Concept of Operations

The UDS Cylinder Yard Manager, or designee, is available 24 hours a day to be reached by the USEC PSS for notification of abnormal facility conditions and/or activation of the EOC and/or UDS EMC. UDS management assesses the potential for public interest in events and recommends an appropriate response to inquiries or media advisory.

During an emergency involving UDS operations/facilities and when the EOC and EMC are activated, UDS personnel may be escorted to the site EOC, or continue to be represented by a third party in the USEC EOC. UDS management, in consultation with the USEC EOC, will assess the need for news and photo releases, news conferences, interviews, and activation of the Joint Public Information Center (JPIC). UDS site management prepares statements and releases to the media concerning emergency events with assistance provided by the USEC EOC, UDS EMC, and/or JPIC personnel. UDS news releases are reviewed and approved by the DOE Site Lead and UDS site management after consultation with the Crisi Manager. If the JPIC is activated, approved news releases and statements are sent to the JPIC to be coordinated with other federal, state, county, and local information officials (as appropriate to the emergency) before release to the news media.

News conferences are held in a designated briefing room at the JPIC with federal, state, and local officials as necessary. Federal, state, and local officials will discuss their response to the emergency and any recommended protective actions for the public. The UDS spokesperson at the JPIC provides information regarding Paducah DUF_6 Conversion Plant project emergency conditions. Site management representatives from UDS and the DOE site office assist the UDS spokesperson as needed.

11 EMERGENCY FACILITIES AND EQUIPMENT

Emergency facilities, equipment, and materials are established and maintained to adequately support emergency response operations. Response activities will be coordinated at the emergency facilities required to be activated for each particular classification. These facilities and associated equipment will be used to coordinate and manage response as well as to assess and monitor functions. Additional facilities provide for specific response activities, such as security, decontamination, medical support, and media interface.

Equipment includes information management and communication systems that are capable of ensuring all required notifications of emergency events and all necessary exchanges of information, including dissemination of emergency protective actions that may be required.

Emergency response facilities are activated by Paducah site emergency authorities, such as the PSS or Crisis Manager, as needed, to provide direction and control, offsite resource coordination, and public information for emergencies occurring onsite. Facilities are declared operational when minimum staffing is present and vital equipment is operational, as outlined in procedures. The following are descriptions of facility locations, composition, activation criteria, and functions.

11.1 Emergency Facilities

The Central Control Facility (CCF), located in Building C-300, is used to conduct initial assessments of abnormal facility conditions, notifying site emergency response

personnel, making initial required emergency notifications, activating public warning systems, and implementing onsite protective actions. Response actions of the CCF staff are directed by the USEC PSS. The PSS provides overall command and control of plant emergencies prior to the site EOC being declared operational.

The on-scene Command Post, established by USEC, is a distinctly marked vehicle or specific area equipped with communications capabilities and other resources required to manage the incident. The Command Post provides the IC and emergency response personnel with a location as close as possible to the actual scene from which they can operate and assess the situation. Uncontrolled events, such as meteorological changes or escalation of the emergency, may cause the relocation of the Command Post.

The USEC EOC is the onsite facility for the overall management of the emergency response. The Paducah Site EOC is a dedicated facility located within the limited area in Building C-300. It contains appropriate instrumentation, displays, and communications equipment and is the primary facility for coordinating onsite response and mitigation and offsite interface activities. DOE Site Office personnel respond to the EOC upon activation to provide assistance and advice to the USEC CM and EOC staff. In the event the EOC is activated, UDS may activate its EMC located outside the limited area to monitor event conditions, communicate with USEC emergency response personnel, and provide emergency assistance as necessary.

The EOC is activated by the PSS for emergencies classified as an Alert or Site Area Emergency, and at the discretion of the PSS, may be activated for less severe incidents, i.e., events that may be categorized as a DOE facility operational emergency. Upon activation, the EOC provides coordination and management for the overall facility emergency response, and communicates with DOE and federal, state, and local organizations. The USEC Crisis Manager directs EOC activities.

EOC personnel are responsible for performing the following: emergency notifications to and technical interactions with offsite federal, state, and local officials; generation of emergency information for public information activities; ensuring required support to the incident scene; and coordination of support for onsite response and mitigation.

EOC communications equipment include a commercial telephone system, plant telephone system, base station and portable radios, dedicated ring-down line to Paducah-McCracken County Office of Emergency Management/911, facsimile machines (normal and secure), direct links to plant computer systems, site public address system, and radios and a television.

EOC documentation includes emergency plans and implementing procedures, facility operations procedures/manuals, site safety analysis reports, administrative procedures/manuals, technical/equipment/manufacturers manuals, and other plant/facility drawings.

The Joint Public Information Center (JPIC), located at an off-site location, is the designated location for the dissemination of official information about the emergency to the media and public. The JPIC provides for the coordination of information with interfacing federal, state, and local organizations and spokespersons, news releases and media briefings, and workspace for site personnel, interfacing organization personnel, and representatives of the news media.

JPIC operations are described in USEC emergency plan implementing procedures.

11.2 Emergency Equipment

See Section 5.2, Communications, for a complete description the Paducah facility communications systems.

Emergency monitoring equipment is maintained onsite for normal and emergency response use. Designated emergency vehicles responding to the scene contain necessary emergency equipment and supplies and ensure that radiological monitoring equipment are readily available to emergency personnel. Radiological monitoring equipment is also stored in Building C-300 for designated field monitoring personnel.

In addition to radiological monitoring equipment, the site maintains emergency monitoring instrumentation for chemically toxic material releases. These instruments are maintained in dedicated emergency response kits and will also be supplied from USEC's inventory of routinely used monitoring equipment. Equipment to monitor toxic chemical materials is also located on designated emergency vehicles. The dedicated emergency instruments are listed in applicable USEC emergency procedures.

Weather forecasting information is obtained from the Paducah office of the National Weather Service located at Barkley Regional Airport. Weather forecasts are used to inform Paducah site personnel of impending related hazards, principally driving hazards, and may affect the scheduling of proposed facility activities/operations. Meteorological data is used to ensure safe emergency scene response (from upwind direction), facilitate plume dispersal modeling, and to develop appropriate protective action recommendations in the event of an airborne release. Current meteorological data is displayed in the plume modeling area of the EOC in building C-300.

12 EMERGENCY MANAGEMENT PROGRAM ADMINISTRATION

This section describes the provisions and responsibilities established for the administration of the Paducah UDS Emergency Management (EM) program. The UDS Cylinder Yard Manager, or designee, has overall responsibility for assuring the program meets designated emergency management requirements.

12.1 Emergency Management Program Administrator

UDS has the responsibility for managing and implementing the program within the requirements of DOE on emergency management program implementation in coordination with the other Site contractors with USEC being the primary emergency responders. UDS has designated an individual to serve as the Emergency Management Coordinator for the Site DUF_6 Conversion Plant.

The DOE Site Office is responsible for providing oversight of the UDS emergency management program. The UDS EM Coordinator is delegated the overall responsibility for implementation of the UDS emergency management program. The responsibilities of the EM Coordinator include the following:

- Coordinate the Paducah DUF_6 Conversion Plant emergency management program.

- Implement emergency management program policies and procedures in conjunction with USEC EM and other affected contractors/local agencies.
- Develop, coordinate, and maintain administrative procedures for the emergency management program in conjunction with USEC EM and other affected contractors/local agencies..
- Develop and maintain the Site DUF_6 Conversion Plant Emergency Plan in compliance with applicable regulations and in conjunction with USEC EM and other affected contractors/local agencies
- Ensure an adequate facility emergency support organization is established and maintained.
- Perform surveys, reviews, and evaluations to ensure facility emergency management program requirements are being maintained. This includes reviewing the USEC emergency management services provided to UDS in accordance with contractual specifications.
- Assist in the coordination of facility drills and exercises.
- Assist in the coordination of applicable emergency management training.
- Assist in the coordination of the resolution of emergency management program open items.
- Review UDS activities and facilities to identify hazards and ensure consequence assessments.
- Develop and administer a budget to support UDS EM program objectives.
- Serve as Point-of-Contact with USEC Emergency Management and PSS office.

12.2 Document Control

The Paducah DUF_6 Conversion Plant Emergency Plan is reviewed annually and updated by revision when necessary. The Emergency Plan is approved by the UDS Cylinder Manager, or designee, and DOE Site Office. The emergency plan and/or procedures are maintained and distributed as official company documents. The updates of the plan and procedures shall incorporate necessary changes to correct deficiencies identified in emergencies, training, drills, and/or exercises. Emergency plans developed by other Paducah facility organizations, such as USEC and other DOE contractors, and participating offsite organizations and agencies are reviewed as requested, or as necessary.

The EM Coordinator is responsible for coordinating reviews and audits of the emergency plan and related procedures.

12.3 Emergency Management Training and Drills

The Emergency Management training and drills ensure that facility personnel are prepared to respond, manage, mitigate, and recover from emergencies associated with Paducah DUF_6 Conversion Plant site operations. The program includes both classroom instruction and hands-on experience. Participants include personnel assigned to the ERO (i.e., EOC, EMC, and JPIC cadres, Local Emergency Directors, facility emergency wardens, etc.), and general employees. Both initial and periodic refresher training is provided for the instruction and qualification of all personnel (primary and alternate) comprising the ERO.

General training for general employee response is included in both the General Employee Training (GET) Program and the facility emergency action plan program. Emergency-related information includes emergency awareness, warnings and alarms, emergency response actions, including protective actions, evacuation, and accountability.

UDS emergency response/support personnel assigned to the EOC, EMC, and JPIC are required to complete emergency response training upon assignment. Emergency training requirements for UDS emergency personnel are defined in the appropriate UDS emergency management administrative procedures.

USEC provides emergency management-related training to the PGDP onsite emergency response organization and to the offsite response organizations in accordance with USEC emergency plans and procedures.

Annual drills are conducted to familiarize employees with protective actions, such as evacuation and sheltering-in-place. A drill is a supervised "hands-on" instruction session for individuals or teams that develops, tests, or maintains a specific operational or emergency response capability. Drills are conducted to familiarize employees with appropriate emergency response actions, such as protective actions. Drills may be used to prepare for exercises as well as to resolve deficiencies or develop improvements in specific functional areas. They are also used to develop skills and maintain proficiency among members of the ERO.

A coordinated program of drills and exercises is an integral part of an emergency management program. Emergency drills and exercises are conducted to develop, maintain, and test response capabilities of site emergency personnel, facilities, equipment, procedures, and training. The UDS Emergency Management Coordinator has responsibility for oversight of the UDS emergency management drill and exercise program/activities.

UDS management and supervisors are responsible for ensuring employees, and sub-contractors under their supervision, are available to participate in periodic drills and/or exercises, including the critiques. Personnel are required to participate in drills and exercises in a safe and realistic manner.

The UDS EM Coordinator is responsible for proper scenario development, establishing a planning schedule, developing the scenario, and identifying participants, controllers, and evaluators for drills and exercises conducted for the conversion plant. The UDS EM Coordinator, or designee, may participate in the planning and conduct of other site drills and exercises in coordination with the USEC emergency management organization.

12.4 Exercises

An emergency management exercise program will be established and implemented for the DUF_6 Conversion Plant once the DOE UF_6 cylinder yard responsibilities are assumed by UDS. The program will validate all elements of the emergency management program over a five-year period. UDS will conduct a minimum of one exercise annually. Exercises will have specific objectives and will be fully documented in an exercise scenario package. The exercise scenario will contain a preplanned description of the accident to be used and prepared accordingly to the scope and objectives of the exercise. Each scenario describes facility-specific

emergency events that serves as the basis for emergency response actions. Scenarios are varied from exercise to exercise and are designed to minimize simulation. No scenario information is given to participants prior to an exercise.

A control group shall be established for each exercise to ensure that events occur that addresses the objectives of the exercise. An evaluation group shall be established for each exercise to assess the performance of the exercise participants against the objectives. Exercise controllers and evaluators are provided training on proper conduct of emergency exercises. This training includes information on safety precautions, scenario messages, simulated actions, participant interactions and controller input, evaluation methodology, and critique format.

Exercises include a critique process to provide initial impressions of accomplishments and shortcomings discovered during the exercise. Program improvements and corrective actions identified during actual emergencies or during drills and exercises are incorporated into the UDS emergency management program.

USEC conducts an exercise for the gaseous diffusion plant to test and demonstrate an integrated emergency response capability involving offsite response organizations. UDS and DOE site office personnel may participate in USEC's emergency management exercises.

12.5 Self Assessment

Periodic assessments of the UDS Emergency Management program are conducted to ensure adequate and effective program functions. The assessments may be in the form of independent assessments, surveillances, and management assessments. The scope of the assessments are to include the emergency plan and related implementing procedures; EM training activities; drills and exercises; and emergency facilities, equipment and supplies.

The UDS EM Coordinator shall respond to adverse assessment findings of the emergency management program by providing the proposed corrective action, schedule for corrective action, and measures to prevent finding recurrence. Assessment findings shall be entered into the management tracking system and tracked until closure.

In addition, the EM Coordinator, by virtue of his involvement with the UDS emergency management program, provides an ongoing review.

12.6 Maintenance and Inventory of Emergency Facilities, Equipment, and Supplies

USEC is responsible for maintaining adequate equipment and supplies in support of emergency response operations, and conducting periodic inventories and inspections to ensure equipment and facilities are maintained in operable status for emergency response personnel to perform their respective duties and responsibilities. This includes equipment and materials for radiological and toxic monitoring, protective clothing, fire-fighting equipment, emergency medical supplies, sampling equipment, respiratory protection equipment and emergency air supplies, damage control materials, dedicated spare parts, radios, telephones, vehicles, and administrative supplies. Emergency facility and equipment maintenance is described in USEC emergency plan implementing procedures.

12.7 Emergency Readiness Assurance Plan (ERAP)

An ERAP is developed that addresses planning and preparedness for emergency response at the Paducah DUF_6 Conversion Plant site. The ERAP is submitted to the DOE Site Office by September 30 of each calendar year. The annual ERAP covers a planning cycle of 5 fiscal years from the date of the updated ERAP.

The ERAP serves as the baseline document for emergency readiness assurance evaluations and as a planning tool to identify and develop needed resources and improvements. An updated ERAP highlights any changes in planning bases, organizations, exemptions, etc., from previous ERAPs, as well as compare actual achievements to goals, milestones, and objectives.

12.8 Letters of Agreement

Letters of Agreement with offsite support organizations and agencies are administered and maintained by USEC.

13 SUPPORTING INFORMATION

13.1 Acronyms

AIHA	American Industrial Hygiene Association
ALARA	As Low As Reasonably Achievable
CCF	Central Control Facility
CFR	Code of Federal Regulations
CM	Crisis Manager
DOE	U.S. Department of Energy
DOE-OROC	DOE-Oak Ridge Operations Office Emergency Operations Center
DOT	U.S. Department of Transportation
DSA	Documented Safety Analysis
DUF6	Depleted Uranium Hexafluoride
EALs	Emergency Action Levels
EAP	Emergency Action Plan
EAS	Emergency Alerting System
EM	Emergency Management
EMC	Emergency Management Center
EMHA	Emergency Management Hazards Assessment
EMS	Emergency Medical Services
EMTs	Emergency Medical Technicians
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPIPs	Emergency Plan Implementing Procedures

EPZ	Emergency Planning Zone
ERAP	Emergency Readiness Assurance Plan
ERPG	Emergency Response Planning Guidelines
ERO	Emergency Response Organization
ERPGs	Emergency Response Planning Guidelines
ETTP	East Tennessee Technology Park
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Teams
GET	General Employee Training
HQ	DOE-Headquarters
IC	Incident Commander
ICS	Incident Command System
JPIC	Joint Public Information Center
LED	Local Emergency Director
msl	Mean Sea Level
NAERG	North American Emergency Response Guidebook
NRC	Nuclear Regulatory Commission
NWS	National Weather Service
ORO	DOE Oak Ridge Operations
OROC	Oak Ridge Operations Center
PA	Public Address System
PAGs	Protective Action Guidelines
PARs	Protective Action Recommendations
PAs	Protective Actions
PGDP	Paducah Gaseous Diffusion Plant
PIO	Public Information Officer
PPPO	Portsmouth-Paducah Project Office
PSS	Plant Shift Superintendent
PWS	Public Warning System
RCM	Resident Construction Manager
RCRA	Resource Conservation and Recovery Act of 1976
RM	Recovery Manager

RQ	Reportable Quantity
SAE	Site Area Emergency
SNM	Special Nuclear Materials
TLD	Thermoluminescent Dosimeter
UDS	Uranium Disposition Services, LLC
USCG	U.S. Coast Guard
USEC	United States Enrichment Corporation
USQD	Unreviewed Safety Question Determination

13.2 Definitions

The following definitions apply to this Emergency Plan and applicable Appendices.

Accident. A deviation from normal operations or activities associated with a hazard that has the potential to result in an emergency.

Agency. Any organization that acts in the place of a government and by its authority (e.g., the Federal Emergency Management Agency is an agency of the Federal Government).

Consequence. The result or effect (especially projected doses or dose rates) of a release of radioactive or hazardous materials to the environment.

Consequence Assessment. The evaluation and interpretation of radiological or other hazardous materials measurements and other information to provide a basis for decision making.

Contractor. A non-Federal party to a DOE contract, engaging in activities or operations involving hazards that could potentially affect the health and safety of employees or the public or the quality of the environment.

Drill. A supervised, hands-on instruction period intended to test, develop, and/or maintain a specific emergency response capability. A drill is often a component of an exercise.

Emergency. An emergency is the most serious event and consists of any unwanted operational, civil, natural-phenomenon, or security occurrence that could endanger or adversely affect people, property, or the environment. (For the purpose of this Emergency Plan, an emergency is an abnormal event impacting the UDS site/activities requiring time-urgent emergency response actions by the site's (USEC) emergency response organization to mitigate and/or protect UDS site personnel and/or facilities.)

Emergency Action Level (EAL). Specific, predetermined, observable criteria used to detect, recognize, and determine the appropriate class of an emergency. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter, on site or off site; a discrete, observable event; results of analyses; or another observed phenomenon that indicates entry into a particular emergency class.

Emergency Management. The development, coordination, and direction of planning, preparedness, and readiness assurance activities.

Emergency Management Center (EMC) A facility operated by UDS in which UDS management and support personnel assist the Site EOC in providing the most appropriate response. UDS' EMC provides technical guidance and allows a centeralized point to coordinate, process, and distribute information. The UDS EMC is activated whenever the Site EOC is activated and/or when site conditions may adversely affect UDS operations or the safety of UDS responsible personnel.

Emergency Operations Center (EOC). A central facility from which management and support personnel carry out coordinated emergency response activities. The emergency operations center may be a dedicated facility or office, conference room, or other pre-designated location having appropriate communications and informational materials to carry out the assigned emergency response mission and located, where possible, in a secure and protected location.

Emergency Plan A brief, clear, and concise description of the overall emergency organization, designation of responsibilities, and procedures, including notifications, involving coping with any or all aspects of a potential credible emergency.

Emergency Readiness Assurance Plan (ERAP). A plan to ensure that emergency plans, implementing procedures, and resources are adequate and sufficiently exercised and evaluated.

Emergency Response Organization. The designated group(s) of personnel responsible for coping with and minimizing or mitigating the effects of any emergency.

Emergency Response Planning Guidelines (ERPGs). A hazardous material personnel exposure level or range which, when exceeded by a short term or acute exposure, will cause irreversible or other serious health effects in humans. The ERPGs are approved by a committee of the American Industrial Hygiene Association.

Event. Any real-time occurrence or significant deviation from planned or expected behavior that could endanger or adversely affect people, property, or the environment.

Exercise. A scheduled and planned large-scale activity that tests the integrated capability and most aspects of the emergency management program associated with a particular DOE facility.

Facility. Any equipment, structure, system, process, or activity that fulfills a specific purpose.

Hazardous Material. Any solid, liquid, or gaseous material that is toxic, flammable, radioactive, corrosive, chemically reactive, or unstable upon prolonged storage in quantities that could pose a threat to life, property, or the environment.

Incident. Any deviation from normal operations or activities that has the potential to result in an emergency.

Letter of Agreement. An agreement drawn up between the plant and off-site local governments or their organizations for assistance in the event of an emergency (also

called a Memorandum of Understanding, Mutual Aid Agreement, and/or Letter of Assistance.

Offsite. The area beyond the boundaries of the Paducah DOE reservation.

Onsite. The area within the boundaries of the Paducah DOE reservation.

Paducah DOE Reservation. 3,423-acre federal reservation which includes the Paducah Gaseous Diffusion Plant and 2,079 acres leased to the Kentucky Wildlife Department.

Protective Action. Physical measures, such as evacuation or sheltering, taken to prevent potential health hazards resulting from a release of hazardous materials to the environment from adversely affecting employees or the offsite population.

Protective Action Guide (PAG). A radiation personnel exposure level or range beyond which protective action should be considered. PAG values should reflect a balance of risks and costs to on site personnel, public health and safety, and the environment weighed against the benefits obtained from protective actions.

Recovery. Actions taken after a facility/area has been brought to a stable or shutdown condition to return the facility/area to normal operation/conditions.

END OF DOCUMENT